

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference A3-X0317P	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/009600	International filing date (<i>day/month/year</i>) 30 June 2004 (30.06.2004)	Priority date (<i>day/month/year</i>) 25 December 2003 (25.12.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 27 July 2006 (27.07.2006) Authorized officer <p style="text-align: center; font-size: 1.2em;">Yoshiko Kuwahara</p> e-mail: pt07@wipo.int
Facsimile No. +41 22 338 82 70	

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

A3-X0317P

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/009600

International filing date (day/month/year)

30.06.2004

Priority date (day/month/year)

25.12.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input checked="" type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/009600

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

- a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

- b. format of material

☐

in written format

☐

in computer readable form

- c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/009600

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 6-11

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 6-11

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/009600

Box No. IV

Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:

The inventions described in claims 1-5 relate to a method or a device for analyzing a sugar chain structure based on the interaction between a protein immobilized in an FAC device and a sugar chain. Meanwhile, the inventions described in claims 6-11 relate to a method or a device for analyzing the sugar chain structure based on the interaction between the protein immobilized on a substrate and the sugar chain.

When the FAC device is used, analysis is carried out based on the sugar chain, which is eluated, whereas when the substrate is used, analysis is carried out based on the bond with sugar chain detected with the protein and the formation of a single general inventive concept is not recognized between the two.

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts
- ☒ the parts relating to claims Nos. 1-5

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/009600

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																											
1. Statement	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top; padding: 5px;">Novelty (N)</td> <td style="width: 5%;"></td> <td style="width: 40%; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table> </td> </tr> <tr> <td style="vertical-align: top; padding: 5px;">Inventive step (IS)</td> <td></td> <td style="padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table> </td> </tr> <tr> <td style="vertical-align: top; padding: 5px;">Industrial applicability (IA)</td> <td></td> <td style="padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table> </td> </tr> </table>	Novelty (N)		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table>	Claims		YES	Claims	1-5	NO	Inventive step (IS)		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table>	Claims		YES	Claims	1-5	NO	Industrial applicability (IA)		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">Claims</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> <td style="width: 20%; text-align: right;">YES</td> </tr> <tr> <td style="text-align: right;">Claims</td> <td style="border-bottom: 1px solid black;">1-5</td> <td style="text-align: right;">NO</td> </tr> </table>	Claims		YES	Claims	1-5	NO
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2. Citations and explanations:	<p>Document 1: 'Dai 53 Kai Japanese Electrophoresis Society Symposium Post Genome Kenkyu no PERSPECTIVE: Functional Glycomics,' p.4-6, 30 June 2003</p> <p>Document 2 : Nihon Kogyo Shinbun, p. 20, 02 July 2003</p> <p>Document3: ' Dai 24 Kai The Japanese Society of Carbohydrate Research Yoshishu,' The Japanese Society of Carbohydrate Research, p. 7, 03 July 2003</p> <p>Document 4: Jun HIRABAYASHI, "Lectin Affinity o Mochiita Glycome Kaiseki Gijutsu," Protein, Nucleic acid and Enzyme, Vol. 48, No. 11, p. 1534-1541 & 1433; 10 August 2003</p> <p>Document 5: Jun HIRABAYASHI, "Seimeisa o Rikai suru – Tosa Kenkyu no Genjo," Nikkei Science, Vol. 33, No. 11, p. 116, 01 November 2003</p> <p>Document 6: Sachiko NAKAMURA, Comprehensive interaction analysis between plant lectins and PA-oligosaccharides by an automated FAC system, Seikagaku, Vol. 75, No. 8, 25 August 2003</p> <p style="margin-left: 40px;">Documents 1-6 are documents which were disclosed not disadvantageously or proposed by the applicant in the appeal relating to exceptions to lack of novelty of invention.</p> <p style="margin-left: 40px;">Claims 1-5</p> <p style="margin-left: 40px;">The inventions described in claims 1-5 are the same as the inventions described in documents 1-6.</p>																											

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/009600

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Document 7 [Jun HIRABAYASHI, Oligosaccharide specificity of galectins: a search by frontal affinity chromatography, Biochimica et Biophysica Acta, vol. 1572, p. 232-254, 19 September 2002] describes measuring oligosaccharides marked with aminopyridine using an FAC device to analyze oligosaccharides and to analyze these using a computer.

Claims 1-5

Making a comparison with the data patterns in the preexisting samples in a database using a computer when analyzing sugar chain structure using the system described in document 7 is obvious to a person skilled in the art.